

SharpStreamer™ Mini PCIe-7205 High-Density Video Accelerator

Data Sheet

Off-the-Shelf High Density Video Transcoding Accelerator Card

- In-place upgrade for deployed transcoding servers
- Smaller card size to support existing infrastructure with half size PCI Express slots
- Optional 10G SFP+ front panel ports for encoding applications
- No need for dedicated appliances
- Optimized H.264/AVC and H.265/HEVC transcoding density in a smaller format

The Artesyn SharpStreamer™ PCIe-7205 high-density video accelerator enables service provider networks to offer video transcoding services quickly and dynamically. As an add-on card, the SharpStreamer PCIe-7205, with its half-size form factor, offers quick and scalable integration with existing and standard server architectures. The SharpStreamer PCIe-7205 meets the demands of ISPs and MSOs who want to use existing servers and cloud infrastructure to support new video transcoding services.

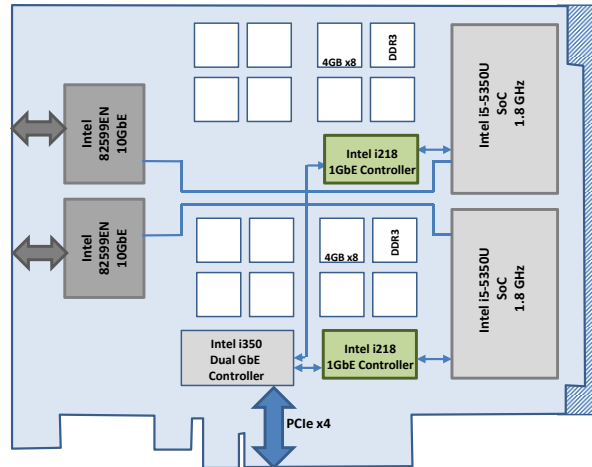
With a focus on the high-density and low power demands of video streaming applications such as OTT streaming servers, mobile network optimization, video conferencing and broadcast equipment, Artesyn employs one or two Intel® Core™ i5 processors with Intel® HD Graphics 6000 GPU accelerated devices in a small and scalable PCI Express card footprint that is easily deployable in off-the-shelf platforms. Each SharpStreamer PCIe-7205 is capable of up to 22 streams of 1080p H.264 transcodes, or 2 streams of 1080p H.265/HEVC transcodes (dual CPU version).

Compared to dedicated appliances, the SharpStreamer solution is more easily deployable, portable, and does not constrain operators to only one type of equipment to monetize OTT streaming content. It also offers network scalability, enabling providers to pay as you go as the subscriber base increases by adding more cards and density as needed. Compared to software-only solutions, the SharpStreamer PCIe-7205 requires far fewer servers and much less operational cost to power video transcoding services.

The SharpStreamer PCIe-7205 is equipped with a software development kit comprised of the Intel® Media Server Studio runtime files with the Intel HD Graphics 6000 fixed-function hardware acceleration, monitoring and processor subsystem O/S and management tools for easy integration with server host processing environments.



Hardware Overview & Block Diagram



Hardware

Each SharpStreamer™ PCIE-7205 card supports up to two Intel® Core™ i5 processor subsystems. Each subsystem communicates with the host server over their own Gigabit Ethernet link and supports 8GB of DDR3-1600 dual channel memory for a total of up to 16GB for the entire card. The SharpStreamer PCIE-7205 card uses power from both the PCI Express slot and an on-board auxiliary power connector.

MAIN CHIPSET**

- (1) or (2) Dual-core Intel Core i5-5350U processors 1.8 GHz, Turbo up to 2.9 GHz

PROCESSOR GRAPHICS

- Intel® HD Graphics 6000
 - Graphics base frequency 300 MHz
 - Graphic max dynamic frequency 1.0 GHz

MEMORY

- 16GB Dual Channel DDR3-1600
 - 8GB per processor subsystem
- Two (2) MicroSD slots

HOST INTERFACES

- PCI Express x4 Gen 2.0
 - Intel® i350AM2 Dual Gigabit Ethernet Controller

EXTERNAL INTERFACES

- 12V DC auxiliary power
 - 6-pin Molex connector
- Dual 10G SFP+ front panel connectors (1 per MCP)

POWER REQUIREMENTS**

- Estimated peak electrical power: 70 W

TEMPERATURE CHARACTERISTICS**

- Normal operation: 0 °C to 55 °C

RELEVANT CARD SIZE

- Full Height; Half Length: H x L: 111.15 mm X 239.83 mm
- Single Width, Half Size

RELEVANT STANDARDS

- PCI-SIG PCI Express Base Specification rev. 2.0

**Please note these values are subject to change.

HARDWARE ACCELERATED CODECS

- H.264
- H.265 (Partial acceleration)
- MPEG-2
- MJPEG (Partial acceleration decode only)
- VC-1 (Decode only)
- VP8 (Partial acceleration)

VIDEO PROCESSING APIS

- Composition
- Scaling
- Color-Space Conversion
- De-noise
- Adaptive De-Interlace
- Interpolated Frame Rate Conversion

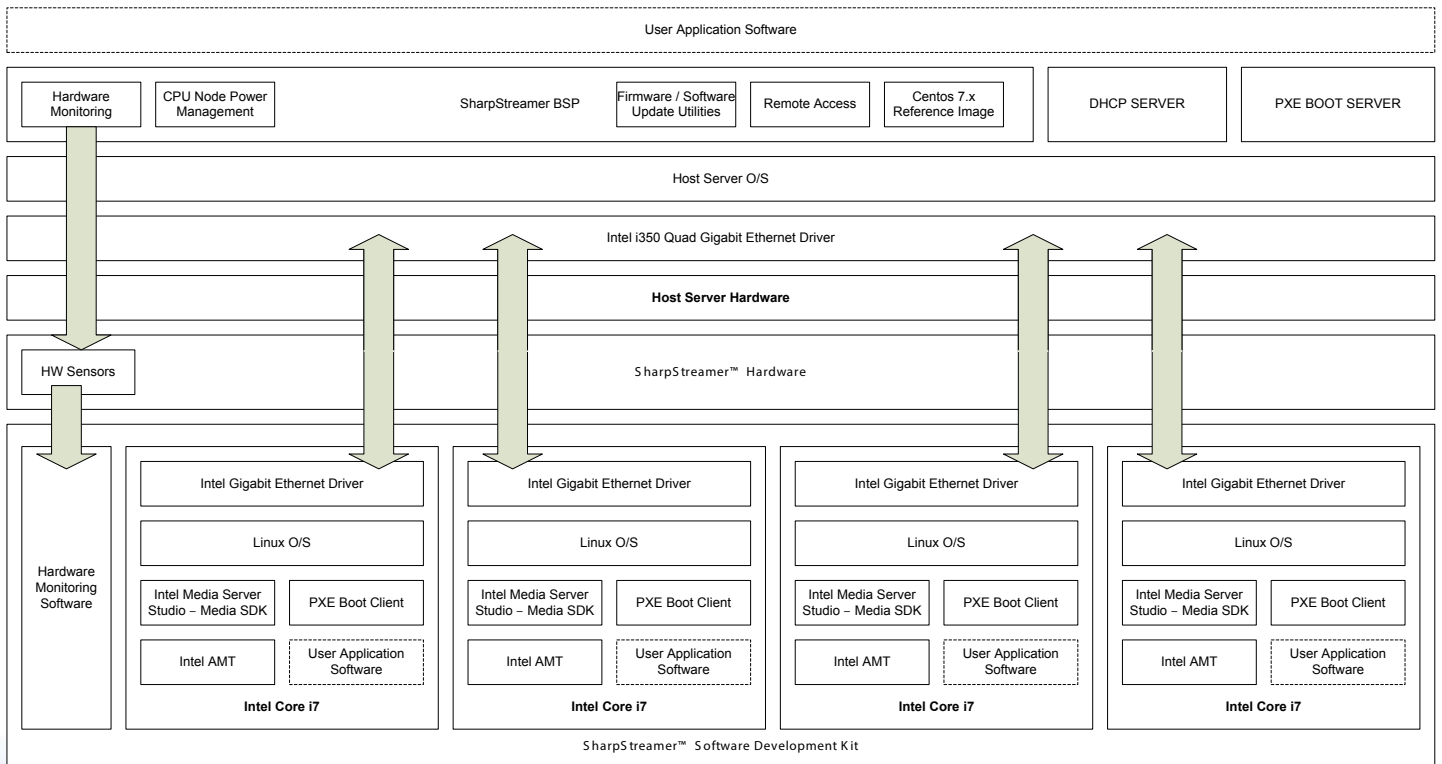
Representative Performance

of 1080P30 Transcode Channels

# of SharpStreamer Mini(s)	1 - Single CPU	1 - Dual CPU	2	14
H.264 (AVC)	11	22	44	308
HEVC	1*	2	4	28

*Preliminary performance based on 3rd party software benchmark testing. HEVC performance may increase with ongoing benchmark testing in progress. For actual performance results for specific applications please contact your Artesyn FAE.

Software Block Diagram



Ordering Information

PCIE Boards	Description
PCIE-7205-1	PCIE card with 1x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz
PCIE-7205-2	PCIE card with 2x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz
PCIE-7205-2-2	PCIE card with 2x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz, 2x Intel® 82599EN 10G Ethernet controllers connected to front panel SFP+ sockets

Software Development Kit

Includes:

- Network bootable Linux Operating System for each processor subsystem with Intel® Media Server Studio - Essentials Edition SDK runtime files
- Remote console access to BIOS and OS
- Hardware Monitoring Software
- Host Side Artesyn Firmware and Software Update tools
- The card's processor subsystems can be communicated with over Ethernet from the host. Each processor's Linux OS includes the Ethernet drive.
- Host system must have Intel® i350 Quad Gigabit Ethernet driver installed for proper communication with card

Intel Media Server Studio Media SDK:

SharpStreamer™ SDK comes packaged with Intel® Media Server Studio - Essentials Edition runtime files. For development purposes, Intel Media Server Studio - Essentials Edition must be downloaded and installed on the each Intel® Core™ i5 node. The Intel Media Server Studio SDK contains an application programming interface (API) library for developing media applications. The kit makes it easier for developers to optimize their applications with the use of the Intel® HD Graphics 6000 fixed-function hardware acceleration. Some application use cases which can benefit from this acceleration include video processing, transcoding and video conferencing.

Network Bootable Operating System:

- First Release: Centos 7.x

SOLUTION SERVICES

Artesyn Embedded Technologies provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh.

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